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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/592,310	06/13/2000	Upendra V. Chaudhari	YOR-2000-0167US1	7377
35195	7590	01/11/2005	EXAMINER	
FERENCE & ASSOCIATES 400 BROAD STREET PITTSBURGH, PA 15143			LAFORGIA, CHRISTIAN A	
			ART UNIT	PAPER NUMBER
			2131	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/592,310

Applicant(s)

CHAUDHARI ET AL.

Examiner

Christian La Forgia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The amendment filed on 28 June 2004 is noted and made of record.
2. Claims 1-19 have been presented for examination.

#### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.
4. See further rejections that follow.

#### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner would like to point out that where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). In addition, the Applicant fails to meet the requirements of redefining a term as set forth in the MPEP § 2106. In order to define/redefine a term, the Applicant must do so "with reasonable clarity, deliberateness, and precision" and must "set out his uncommon definition in some manner within the patent disclosure" so as to give one of ordinary skill in the art notice of the change" in meaning. The term "discriminant" in claims 1-

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19 is used by the claim to mean, “score”, while the accepted meaning is “An expression used to distinguish or separate other expressions in a quantity or equation.” The term is indefinite because the specification does not clearly redefine the term.

*Claim Rejections - 35 USC § 102*

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,913,192 to Parthasarathy et al., hereinafter Parthasarathy.

9. As per claims 1, 9, 10, 18, and 19, Parthasarathy teaches a method of providing authentication, said method comprising the steps of:

receiving an identity claim (column 4, lines 47-53, i.e. “In operation, an unknown user seeks to gain access to something for which his identity ought to be verified”);

determining a target discriminant based on the identity claim and on at least one target model relating to a target individual (column 4, line 53 to column 5, line 17, i.e. “The speaker-independent phrase recognizer 22 recognizes the password phrase by matching the utterance against all the phonetic transcriptions in the lexicon database memory 16, and generates a score phrase of each enrolled user represented by phonetic transcriptions in the lexicon database memory 16.” and “The speaker-independent phrase recognizer 22 selects the N best sets of phonetic transcriptions, each set corresponding to the password phrase selected by a speaker,

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from the sets of phonetic transcriptions in the pre-existing lexicon provided by the lexicon database memory 16.”);

determining a background discriminant based on the identity claim and on at least one background model relating to at least one background individual (column 5, lines 17-30, i.e. “The speaker-dependent phrase recognizer 24 scores the cepstral plus delta cepstral features characterizing the sentence-long password utterance against each of the N speaker dependent whole-phrase HMMs [hidden Markov models] obtained from the HMM database memory 18 to generate a speaker-dependent score for each of the N best possible identities”);

determining a score based on the target discriminant and the background discriminant (column 5, lines 31-45, i.e. “For each of the N best possible identities, the score processor 26 sums the speaker-independent score and the speaker-dependent score to determine a combined score, which is appropriate since the generated scores are estimated log likelihood”); and accepting or rejecting the identity claim based on the determined score (column 5, lines 40-61, i.e. “The verification score is compared to a verification threshold stored in the verification database memory 30. If the verification score is above the verification threshold, then the putative identity is authenticated and allowed access to the system or service.”).

10. Regarding claims 2 and 11, Parthasarathy teaches wherein said step of determining the background discriminant comprises providing a background profile and further determining the background discriminant based on the background profile (column 3, lines 35 to column 4, line 19; column 5, lines 17-30).

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11. Regarding claims 3 and 12, Parthasarathy teaches wherein said step of providing a background profile comprises

determining a permutation matrix (Figure 2 [block 18], column 4, lines 7-46);

determining a weight vector (column 3, lines 35-60);

determining the background profile based on the permutation matrix and the weight vector (column 5, lines 17-30, i.e. “The speaker-dependent phrase recognizer **24** scores the cepstral plus delta cepstral features characterizing the sentence-long password utterance against each of the N speaker dependent whole-phrase HMMs [hidden Markov models] obtained from the HMM database memory **18** to generate a speaker-dependent score for each of the N best possible identities”).

12. With regards to claims 4 and 13, Parthasarathy teaches wherein said step of determining the weight vector comprises selecting a weight graph that relates the individual background discriminant functions to at least one characteristic associated with the at least one target voiceprint model (column 3, lines 35-60”).

13. With regards to claims 5 and 14, Parthasarathy teaches wherein said step of providing the background profile comprises providing the background profile automatically (column 5, lines 17-30).

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14. Concerning claims 6 and 15, Parthasarathy teaches wherein said step of determining the permutation matrix comprises providing the permutation matrix as the identity matrix (Figure 2 [block 18], column 4, lines 7-46).

15. Regarding claims 7 and 16, Parthasarathy teaches providing a plurality of background population models (column 5, lines 17-30, i.e. “Based on the N best possible identities, the speaker-dependent phrase recognizer 24 retrieves the speaker-dependent whole-phrase HMM that corresponds to each of those N best possible identities from the HMM database memory 18”);

ascertaining individual discriminants in correspondence with each of the background population models (column 5, lines 17-30, i.e. “The speaker-dependent phrase recognizer 24 scores the cepstral plus delta cepstral features characterizing the sentence-long password utterance against each of the N speaker dependent whole-phrase HMMs [hidden Markov models] obtained from the HMM database memory 18 to generate a speaker-dependent score for each of the N best possible identities”); and

said step of determining the background discriminant comprising determining the background discriminant as a function of the individual discriminants (column 5, lines 17-30, i.e. “The speaker-dependent phrase recognizer 24 scores the cepstral plus delta cepstral features characterizing the sentence-long password utterance against each of the N speaker dependent whole-phrase HMMs [hidden Markov models] obtained from the HMM database memory 18 to generate a speaker-dependent score for each of the N best possible identities”).

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16. With regards to claims 8 and 17, Parthasarathy teaches wherein said step of determining the background discriminant comprises determining the background discriminant as a function, of the individual discriminants corresponding to each of the background population models, that is dependent on at least one characteristic relating to the target individual (column 3, lines 35 to column 4, line 19; column 5, lines 17-30).

### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

18. The following patents are cited to further show the state of the art with respect to authenticating based on scoring biometric samples, such as:

United States Patent No. 6,070,159 to Wilson et al., which is cited to show expandable biometric searching.

United States Patent No. 6,259,805 to Freedman et al., which is cited to show biometric security encryption.

United States Patent No. 6,160,903 to Hamid et al., which is cited to show providing secure user access.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian La Forgia whose telephone number is (571) 272-3792. The examiner can normally be reached on Monday thru Thursday 7-5.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.




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21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christian LaForgia  
Patent Examiner  
Art Unit 2131

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